REMARKS

The Office Action dated October 16, 2007 has been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto.

Claims 23-42 have been amended to more particularly point out and distinctly claim the subject matter of the invention. Claims 43 and 44 have been added. No new matter has been added. Therefore, claims 23-44 are currently pending in the application and are respectfully submitted for consideration.

The Office Action rejected claims 23-35, 27-32, 34-40, and 42 under 35 U.S.C. § 103(a) as being unpatentable over International Publication No. WO 99/53700 ("Balck"), in view of U.S. Patent No. 5,940,763 ("Alperovich"). The Office Action took the position that Balck discloses all the elements of the claims with the exception of "a controller ... in response to an initiation of a call with a second network, configured to initiated a change in a data rate of a transmitting channel from the first data rate to the second data rate," as recited in claim 23 and similarly recited in claims 30, 37-38, and 42-43. The Office Action then cited Alperovich as allegedly curing the deficiencies of Balck. The rejection is respectfully traversed for at least the following reasons.

Claim 23, upon which claims 24-29 are dependent, recites a network, which includes a controller configured to communicate with a plurality of radiotelephones via respective communication channels over a carrier. The channels are configured to operate at a first or second data rate such that the carrier is configured to transmit data

through a single communication channel operating at the first data rate or two communication channels operating at the second data rate. The controller is further configured to, in response to an initiation of a call with a second network, initiate a change in a data rate of a transmitting channel from the first data rate to the second data rate.

Claim 30, upon which claims 31-36 are dependent, recites an apparatus, which includes a responding device configured to respond to an initiation of a call with a second network. A network is configured to communicate with a plurality of radiotelephones via respective communication channels over a carrier. The channels are configured to operate at a first or second data rate such that the carrier is configured to transmit data through a single communication channel operating at the first data rate or two communication channels operating at the second data rate. The apparatus further includes an initiating device configured to initiate a change in a data rate of a transmitting channel from the first data rate to the second data rate.

Claim 37, upon which claim 44 is dependent, recites a radiotelephone, which includes a controller, in response to a signal from a network, configured to change a data rate of data being transmitted through a channel of the radiotelephone. The network is configured to initiate a change in the data rate of the channel from a first data rate to a second data rate in response to an initiation of a call between the network and a second network.

Claim 38, upon which claims 39-41 are dependent, recites a method, which includes operating communication channels over a carrier in a network at a first or second data rate such that the carrier transmits data through a single communication channel operating at the first data rate or two communication channels operating at the second data rate. The method further includes changing a data rate of a transmitting channel from the first data rate to the second data rate in response to an initiation of a call with a second network.

Claim 42 recites an apparatus, which includes responding means for responding to an initiation of a call with a second network. A network communicates with a plurality of radiotelephones via respective communication channels over a carrier. The channels are configured to operate at a first or second data rate such that the carrier transmits data through a single communication channel operating at the first data rate or two communication channels operating at the second data rate. The apparatus further includes initiating means for initiating a change in a data rate of a transmitting channel from the first data rate to the second data rate.

Claim 43 recites a network, which includes communicating means for communicating with a plurality of radiotelephones via respective communication channels over a carrier. The channels are configured to operate at a first or second data rate such that the carrier is configured to transmit data through a single communication channel operating at the first data rate or two communication channels operating at the second data rate. The network further includes initiating means for initiating, in response

to an initiation of a call with a second network, a change in a data rate of a transmitting channel from the first data rate to the second data rate.

The present invention relates to a system in which there are two networks, for instance an internal network (wireless Intranet office (WIO)) and an external network (GSM), both capable of making internal and external calls. In accordance with one embodiment of the present invention, the WIO network has a gatekeeper, which is capable of dynamically allocating channels to optimize capacity by allocating connections to full-rate or half-rate channels. The deterioration in speech quality caused by changing to a half-rate channel in a connection between two subscribers within the WIO network is lower than the deterioration resulting when one of the subscribers is in the GSM network. Therefore, in a situation where a channel is initiated with a second network, i.e., the GSM network, the gatekeeper will lower the data rate of an existing channel within the WIO network in order to allocate a full-rate channel to the connection with the GSM network. One of the many advantages of the embodiments of the present invention is to optimize the capacity of two networks while maximizing the quality of the connections.

As will be discussed below, the combination of Balck and Alperovich fails to disclose or suggest all of the elements of the claims, and therefore fails to provide the advantages and features discussed above.

Balck generally describes a system of dynamically increasing the capacity of a cellular radio communications system to meet temporary high traffic demands. If the

determined traffic load exceeds a threshold (16), a higher rate traffic channel over which a dual rate mobile station is communicating is handed over to a lower rate traffic channel available in that cell area (18). However, before making the handover from the higher rate traffic channel to the lower rate traffic channel, it is determined whether a handover is permitted. If so, the intra-cell handover is made to a traffic channel which is currently already supporting another lower rate call. Otherwise, any available lower rate traffic channel is assigned.

Thus, for handover in Balck, a base station controller 56 sends a message to the mobile station via an old full rate traffic channel with information about the new half rate traffic channel frequency, time slot, and output power. The mobile station tunes to the new frequency and sends handover access bursts on the appropriate time slot. Once those bursts are detected and acknowledged, a handover complete message is transmitted by the mobile, and the old full rate traffic channel is deactivated making it available for assignment to other communications. See Balck, page 11, line 23 – page 12, line 10.

Alperovich generally describes a method and system for effectuating air-interfaces with a plurality of mobile stations within a mobile telecommunications network. A first mobile station is initially allocated a full-rate traffic channel. When all traffic channels assigned to a particular cell area associated with said first mobile station are seized and a subsequent call connection request is received from a second mobile station located therein, the full-rate traffic channel previously assigned to the first mobile station is divided into a plurality of sub-channels. Each sub-channel then uses a speech coding

scheme with a lower data rate. The first mobile station is then re-allocated to use one of the newly created sub-channels and the second mobile station is similarly allocated to use another one of the sub-channels, thus enabling both mobile stations to effectuate speech connections over the serving mobile telecommunications network. See Alperovich, column 2, lines 20-41, column 6, line 35 – column 8, line 67.

Applicants respectfully submit that Balck and Alperovich, whether considered individually, or in combination, fail to disclose, teach, or suggest, all of the elements of the present claims. For example, the combination of Balck and Alperovich fails to disclose, teach, or suggest, at least, "a controller ... in response to an initiation of a call with a second network, is configured to initiate a change in a data rate of a transmitting channel from the first data rate to the second data rate," as recited in claim 23, and similarly recited in claims 30, 37-38, and 42-43.

As described above, Balck discloses that a base station controller sends a message to a mobile station via an old full rate traffic channel with information about a new half rate traffic channel frequency, time slot, and output power; the mobile station tunes to the new frequency and sends handover access bursts on a appropriate time slot; and once those bursts are detected and acknowledged, a handover complete message is transmitted by the mobile terminal, and the old full rate traffic channel is deactivated making it available for assignment to other communications. Rather than changing the data rate of a transmitting channel, when the determined traffic load exceeds a threshold, Balck hands over a higher rate traffic channel, over which a dual rate mobile station is

communicating, to a lower rate traffic channel available in that cell area. Thus, as the Office Action correctly concludes on page 3 (and similarly concludes on pages 4 and 6-7), Balck fails to disclose or suggest "a controller ... in response to an initiation of a call with a second network, is configured to initiate a change in a data rate of a transmitting channel from the first data rate to the second data rate," as recited in claim 23, and similarly recited in claims 30, 37-38, and 42-43.

However, while the Office Action, on one hand, concedes that Balck fails to disclose initiating a change in a data rate of a transmitting channel from a first data rate to a second data rate in response to an initiation of a call with a second network, the Office Action attempts to extend the scope of Balck by contending that "Balck does disclose the controller interfaces with other controllers and/or other telecommunications networks via a gateway mobile switching center," and that "it is also well known in the art to initiate a call connection between two subscribers in two different networks which involves the data rate change for congestion control." (see Office Action, pages 3-4 and 6-7). The Office Action further contends that "it is well known in the art to initiate a call connection between two subscribers in two different networks which involves the data rate change for congestion control and bandwidth allocation maximization," and that "it would be relevant and obvious to one ordinary skill artisan to change [the] data rate of a call connection between two subscribers in Balck if the change is needed and permitted in order to prevent congestion or maximize bandwidth allocation." (see Office Action, page 9).

Applicants respectfully submit that the Office Action's statement, that it would be obvious to one of ordinary skill in the art to change the data rate of a call connection between two subscribers in Balck if the change is needed and permitted in order to prevent congestion or maximize bandwidth allocation, is inconsistent with what Balck actually discloses. Balck explicitly discloses that it maximizes bandwidth allocation, and in turn prevents congestion, through the process of handing over the mobile station from a full rate traffic channel to a half rate traffic channel. Specifically, Balck discloses that the BSC controller determines if there are any dual rate mobile stations currently assigned to a full rate traffic channel, and, if there are, determines whether they are permitted to use a half rate traffic channel. If there are dual rate mobile stations currently assigned to a full rate traffic channel, and they can use a half rate traffic channel, the BSC controller then determines if there are any half rate connections idle. If there are any idle half rate connections, the BSC controller hands over the current call on the full rate traffic channel for the dual rate mobile station to the idle half rate connection. Balck further discloses that this process occurs "if the traffic load in this cell area exceeds the threshold," and that "a traffic channel can support two half rate traffic channel connections [and] it is more efficient to fully occupy that traffic channel with two half rate calls." (see Balck, page 11, lines 6-21.) Thus, in contrast to the Office Action's statement, Balck does not disclose or suggest maximizing bandwidth allocation, and preventing traffic congestion, by changing the data rate of existing traffic channels. Instead, Balck discloses that it maximizes bandwidth allocation, and prevents traffic

congestion, by handing off mobile station traffic from a full rate channel to the half rate channel. Thus, Applicants respectfully submit that it would not be obvious to one of ordinary skill in the art to change the data rate of a call connection between two subscribers in Balck because Balck discloses handing over a mobile station from one channel to another channel, and Balck does not disclose or suggest changing the data rate of the current channel.

Thus, Balck fails to disclose, teach, or suggest, at least, "a controller ... in response to an initiation of a call with a second network, is configured to initiate a change in a data rate of a transmitting channel from the first data rate to the second data rate," as recited in claim 23, and similarly recited in claims 30, 37-38, and 42-43.

Alperovich does not cure the deficiencies of Balck, as Alperovich also fails to disclose, teach, or suggest, at least, "a controller ... in response to an initiation of a call with a second network, is configured to initiate a change in a data rate of a transmitting channel from the first data rate to the second data rate," as recited in claim 23, and similarly recited in claims 30, 37-38, and 42-43.

As described above, Alperovich discloses that a first mobile station is initially allocated a full-rate traffic channel. When all traffic channels assigned to a particular cell area associated with said first mobile station are seized and a subsequent call connection request is received from a second mobile station, the full-rate traffic channel previously assigned to the first mobile station is divided into a plurality of sub-channels with a lower data rate. The first mobile station is then re-allocated to use one of the newly created

sub-channels, at the lower data rate, and the second mobile station is similarly allocated to use another one of the sub-channels, also at the lower data rate. Thus, rather than changing the data rate of the original full-rate traffic channel from a first data rate to a second data rate, the system in Alperovich divides the original full-rate traffic channel into sub-channels, and each sub-channel uses a lower rate. Therefore, Alperovich discloses that the original full-rate traffic channel still operates at the same rate, and thus, Alperovich does not disclose or suggest changing the rate of the original full-rate traffic channel.

With respect to what Alperovich discloses, the Office Action further stated that "since by the broadest interpretation [of the present claims], as long as the data rate has been changed in the same channel as in Alperovich, it would still meet the claim limitation of changing of the data rate of a transmitting channel from the first data rate to the second data rate." Applicants respectfully submit that Alperovich's division of the original full-rate channel into a plurality of half-rate channels does not meet the claim limitation of changing of the data rate of a transmitting channel from the first data rate to the second data rate because the half-rate channels are not the same channel as the original full-rate channel. Alperovich explicitly discloses that the half-rate channels are new and distinct channels, which are completely separate from the original full-rate channel. Alperovich further discloses that the mobile station, which was originally assigned to the full-rate channel, must be reallocated to the new half-rate channel, through a handover process and can no longer continue communicating over the original

full-rate channel. Thus, as shown in the excerpted paragraphs of Alperovich, the subdivision process of Alperovich requires extra steps to handoff the mobile station to the new channel with a lower data rate; steps that are not required with simply changing the data rate of the preexisting channel:

> As an illustration, the full rate channel is divided into two half-rate channels. The first mobile station 300A currently utilizing the identified full-rate traffic channel is then re-allocated to one of the two newly created half-rate channels. The other half-rate channel is then allocated to the requesting second mobile station 300B to enable both mobile stations to effectuate call connections with the serving mobile telecommunications network in accordance with the teachings of the present invention.
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> In one embodiment, the serving BSC 320 performs an intra-cell handover to switch the first mobile station 300A from the already assigned full-rate traffic channel to a newly created half-rate traffic channel within the same cell. The intra-cell handover is conventionally utilized, for example, to re-allocate a mobile station to a different traffic channel in case the channel quality currently associated with an existing traffic channel is unacceptable.
>
> Accordingly, after dividing or "splitting" the identified full-rate traffic channel into two half-rate channels or sub-channels, the serving BSC 320 instructs the first mobile station 300A to switch to one of the newly created half-rate channels by transmitting a handover command signal 550. The transmitted handover command signal 550 further instructs the first mobile station 300A to communicate using a half-rate coding scheme thereafter. The first mobile station 300A, not knowing why it is being switched to a new channel, switches to the newly allocated half-rate channel. The first mobile station 300A then confirms the handover instruction by transmitting a handover complete signal 560 to the serving BSC 320. The serving BSC 320 then communications the new channel assignment for the first mobile station to the serving MSC/VLF 330 via a channel assignment change signal 570.

(see Alperovich, column 7, line 65 – column 8, line 36).

Thus, Alperovich discloses that the half-rate channels that are created from the division of the original full-rate are new and distinct channels, separate from the original full-rate channel, that the mobile station assigned to the original channel must be handed off to the newly created channel, that the handover is conventionally utilized to reallocate a mobile station to a different traffic channel, and that the handover from the original full-rate channel to the new half-rate channel constitutes a new channel assignment and must be communicated as so to the mobile switch controller. Therefore, Alperovich does not disclose or suggest changing the data rate of a transmitting channel from a first rate to a second rate.

Thus, Applicants respectfully submit that Alperovich, whether considered individually or combined with Balck, fails to disclose, teach, or suggest, at least, "a controller ... in response to an initiation of a call with a second network, is configured to initiate a change in a data rate of a transmitting channel from the first data rate to the second data rate," as recited in claim 23, and similarly recited in claims 30, 37-38, and 42-43.

Therefore, for at least the reasons discussed above, the combination of Balck and Alperovich fails to disclose, teach, or suggest, all of the elements of claims 23, 30, 37-38, and 42-43. For the reasons stated above, Applicants respectfully request that this rejection be withdrawn.

Claims 24-25 and 27-29 depend from claim 23. Claims 31-32 and 34-36 depend from claim 30. Claims 39-40 depend from claim 38. Claim 44 depends from claim 37.

Thus, Applicants respectfully submit that claims 24-25, 27-29, 31-32, 34-36, 39-40, and 44 should be allowed for at least their dependence upon claims 23, 30, 37, and 38, respectively, and for the specific limitations recited therein.

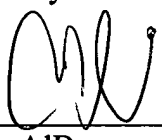
The Office Action indicated that claims 26, 33, and 41 would be allowable if rewritten to include all of the limitations of the base claims and any intervening claims. Applicants respectfully assert that claims 26, 33, and 41 have not been amended to rewrite the claims in independent form including all of the limitations of the base claims and any intervening claims, because Applicants have addressed the formal rejections to the independent claims, which claims 26, 33, and 41 depends from, above. Accordingly, it is respectfully requested that claims 26, 33, and 41 be allowed.

For at least the reasons discussed above, Applicants respectfully submit that the cited prior art references fails to disclose or suggest all of the elements of the claimed invention. These distinctions are more than sufficient to render the claimed invention unanticipated and unobvious. It is therefore respectfully requested that all of claims 23-44 be allowed, and this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,



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Enclosures: Additional Claim Fee Transmittal
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